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OPENING MEETING OF THE 201ST SESSION

The Opening Meeting of the 201st Session will take place on Wednesday, 3rd November, at 2.30 p.m. The Inaugural Address entitled *Looking Ahead* will be delivered by Mr. E. Munro Runtz, F.R.I.C.S., Chairman of the Council.

After the address, medals will be presented by the Chairman, and at the conclusion of these formal proceedings tea will be served in the library. It is hoped that Fellows will be able to take this opportunity to meet the Chairman and Members of the Council.

PRESENTATION OF BICENTENARY MEDAL AND R.D.I. DIPLOMAS

A special meeting of the Society will be held on Monday, 25th October, at 6.30 p.m., when the Chairman of Council will present diplomas to the newly appointed Royal Designer for Industry and Honorary Royal Designer for Industry, Mr. William Lyons and Signor Pinin Farina (Italy) respectively. Both these awards have been made for eminent work in the field of motor car design.

At the same meeting the Chairman will also present the newly instituted Bicentenary Medal, the first award of which has been made to Sir Colin Anderson. As already announced, the Bicentenary Medal is to be awarded annually 'to one who, in a manner other than as an industrial designer, has exerted an exceptional influence in promoting the development of art and design in British industry'.

After the presentations the Master of the Faculty of Royal Designers for Industry, Sir Francis Meynell, will deliver an oration under the title *The Seeing Eye.*

INDUSTRIAL ART BURSARIES COMPETITION, 1954

Details of the new Women's Fashion Section, which, as has already been announced, is being included in the Society's Industrial Art Bursaries Competition for 1954, have now been published and may be obtained from the Secretary. The section will be open to both students and practising designers between the ages of 17 and 25, and will cover the design of articles of women's clothing, hats, shoes, umbrellas and jewellery. The two Bursaries being offered, of £200 and £150 respectively, will be provided from the Bianca Mosca Memorial Trust, which was founded some years ago to commemorate Mme. Bianca Mosca, the eminent London couturier. Its administration has now been taken over by the Society.

LETTER DESIGN AND TYPECUTTING

The Percy Smith Memorial Lecture by

HARRY G. CARTER

of the Oxford University Press, and lately head of the Typographic Design and Layout Section, H.M. Stationery Office, delivered to the Society on Wednesday, 28th April, 1954, with Sir Francis Meynell, Master of the Faculty of Royal Designers for Industry, in the Chair

THE CHAIRMAN: I believe that Mr. Harry Carter is by profession a barrister; but as far as I know he never practised at the Bar, and he wisely—from every point of view except, perhaps, that of finance—decided to choose his occupation in life from one of his three hobbies, or at any rate one of the three hobbies that happen to be known to me. One of these was sailing, and for Mr. Carter, whose fortune is his thoroughness, that would mean designing his own boat and rigging, and such like. The next one was the learning of languages, a new one for every holiday, so that if he decided to go to Russia he learnt Russian before he went, and came back with several dialects as well. The last one, and the significant one for us, was printing. Why he became a printer by trade and not a boat-builder or the one translator at international conferences I do not know. In the event, a happy event for us, Mr. Carter became in turns most things in printing, probably more things in printing than anybody else, certainly anybody of my acquaintance. He has set types and printed them on a hand press; he has sold commercial and book printing 'on the road', the hard way; he has designed letters and learnt how to engrave them. A rival of Stanley Morison as a historian and writer about printing, he has also designed books and odd pieces of printing for as small an establishment as the Nonesuch Press and for as vast an establishment as Her Majesty's Stationery Office. When it was first, and not too soon, decided that there should be a design unit at the Stationery Office, that institution was supremely lucky in being able to acquire Mr. Harry Carter to head it. There he was not merely the purveyor of his good ideas about the design and layout of books, and the appropriateness of this and that type for various purposes, but also the ambassador to government departments which the Stationery Office serves. He even found time to complete a manual of style for the Stationery Office before he left.

My own association with Mr. Carter goes back—happily for me—for something like twenty-five years, and I have seldom written or spoken anything about printing without previously obtaining my best idea and best phrase from Mr. Carter.

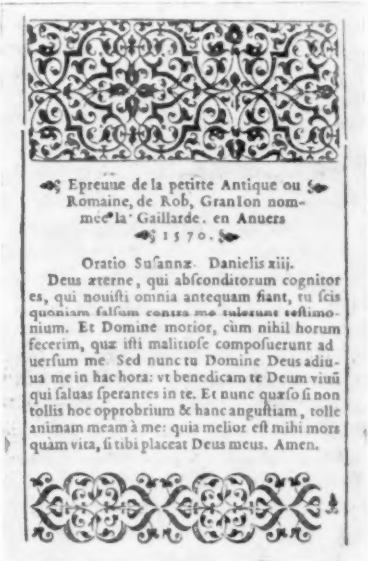
The following lecture, which was illustrated with lantern slides, was then delivered:

THE LECTURE

It is not easy to associate the word 'design' satisfactorily with printing types. I cannot define it, but I think it means the application of intelligence to the making of a thing that could, indeed probably would, be made without it. Of late years, as you know, a great improvement has been brought about by

the application of erudition, taste, enthusiasm and humaneness, but not, I think, intelligence, to printing types. The improvement could, in a sense, be said to have been brought about by design.

The purposeful part of the shaping of letters has not been done by printers, typefounders or punch-cutters, but was done before the day of these tradesmen by all manner of people of whom stone-carvers, scribes and jewellers deserve especially to be mentioned. Letters have grown to be what they are by a slow process akin to those in nature, of which we know very little. Some eminent biologist has said that in nature there are no problems, there are only solutions. The solutions may not seem the best imaginable, but it is no use arguing about them.


Epreuue de la petitte Antique ou Romaine, de Rob, Granlon nommée la Gaillarde. en Anuers
1570.

Oratio Suſannæ. Danielis xiij.
Deus æterne, qui abſconditorum cognitor es, qui nouiſti omnia antequam fiant, tu ſcis quoniam falſum contra me tulerunt teſtimonium. Et Domine morior, cùm nihil horum fecerim, quæ iſti malitioſe compoſuerunt ad uerſum me. Sed nunc tu Domine Deus adiuua me in hac hora: vt benedicam te Deum viuũ qui ſaluas ſperantes in te. Et nunc quæſo ſi non tollis hoc opprobrium & hanc anguſtiam, tolle animam meam à me: quia melior eſt mihi mors quàm vita, ſi tibi placeat Deus meus. Amen.

The Petite Antique *of Robert Granjon*
(Plantin-Moretus Museum, Antwerp)

If there had been a problem about the best forms for letters to which intelligent people could address their minds it would have been what we call legibility. It has been studied by both practitioners of letter-cutting and scientists, but not very fruitfully. The first illustration is of an instinctive artist's version of letters (and type-ornaments), the *Antique* of Robert Granjon, cut about 1570. The second shows an essay in legibility by the eminent mechanical scientist, Alphonse Le Gros, who did in other ways great services to typefounding. The type, called Blackfriars, was made about 1900. [*The lecturer here showed a slide of Blackfriars type, which he believes to be too ugly to be worth reproduction.*]

The comparison of types like these is an exercise in judging legibility, and it turns out to be very difficult. A careful investigation of it was made for the Medical Research Council during the years following 1922 by Mr. R. L. Pyke, and I think it well worth quoting some sentences from the Conclusions in his report published in 1926. 'The experimenter', says Mr. Pyke (meaning himself), 'believes that, *in the laboratory*, Type X was probably the most legible and Type Y the least. He is far more doubtful (*a*) of the *sizes* of the differences and (*b*) whether the relative legibility of the types in the experiments holds in the ordinary world. . . . The hypothesis is here put forward that extremely large typographical differences must be present before it is possible to say that there is any difference in the objective legibility of types. . . . Of types more slightly differentiated it is impossible to say that one is objectively more legible than another. Such types will be legible according as they suit the psychological make-up of the reader. . . . Other influences make for this result. Three types were ordinary in appearance, the rest unusual, and results indicate that to some extent it was ordinariness which helped to make Type X the best, a view psychologically not improbable. . . . The problem of legibility seemed simple at the outset; it is in fact complex and elusive. . . . For [a solution] are needed fewer opinions and more facts'.

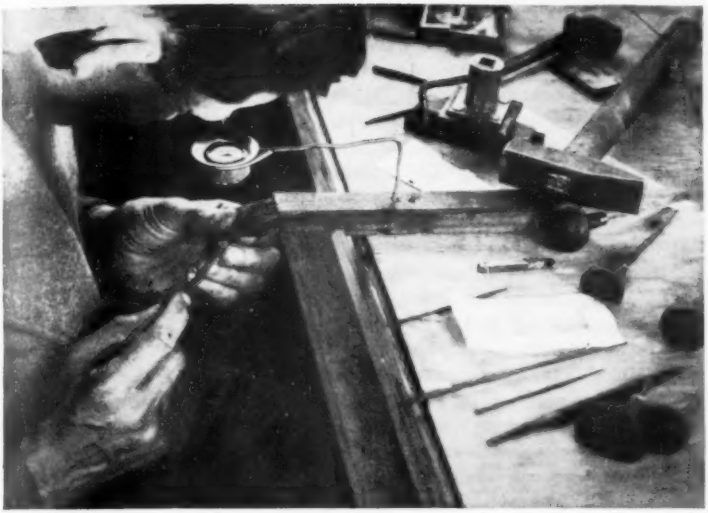
I do not think this report has won enough praise or recognition. It was penetrating of Mr. Pyke, for example, to see that results in the laboratory would probably be different from those in the ordinary world. Most of us would certainly accept his conclusions.

Your psychological make-up being what it is, types cannot really be re-designed; but if your mood were to call for something new, it could very easily be provided. Our make-up faced with the choice of types can be and is altered from time to time, though hesitatingly and within limits. This, then, is perhaps the justification for lecturing about type and showing examples of it.

Is your conception of an ordinary type to be one of those in common use when you were young—one you learnt to read at your mother's knee perhaps? Or would you afterwards admit that it had been better for you to accustom yourself to reading the Granjon *Antique*, illustrated above? Such are questions that have been agitating typography and keeping it alive since typefounding and letter-cutting ceased to be an instinctive proceeding.

If a punch-cutter starts by cutting an *a*, he must make all the other letters and signs of the printer's fount match it. In this sense he must have a design for the various alphabets in his mind's eye before he can begin. What it is and why he has it has generally been an accident, part of the dimly understood process of natural selection which has led to letters as they are. This making up of the punch-cutter's mind can be studied, if not in the laboratory, at least in museums, galleries and libraries. The influences bearing on him must be found out, and his work is useful for the study of the influences too.

The influences most worth studying, as I suggested before, are probably inscribed lettering and handwriting. I wish I were not debarred by ignorance from discussing them adequately. Whether they are represented in type or run



Filing the shoulders of a punch

parallel with it, they are really the design in its proper sense and it is those arts that must be studied before the making of printer's letters. They explain why the printer's fount copies inscribed and written forms mixed up together in such a way that the capitals are mainly inscribed and the lower case mainly written. We need to know why written alphabets copy inscribed and inscribed alphabets the written ones. In such ways we can enrich our psychological approach to letters and make possible an improvement or a new vitality in letters themselves.

I would like to say a little about the making of printer's letters and especially about the initial stage, punch-cutting. It is an art or craft not necessarily connected with printing. It certainly existed before printing, and good printing types have been cut by people who learned it with other ends in view. But a very marked feeling for books and writing and for carved lettering is necessary to make a typographical letter-cutter—for books especially. The difference between a good and bad punch-cutter from a printer's point of view is chiefly a question of his psychology, for the requisite skill, though great, is not very rare.

A letter is cut in relief, reversed left to right, on the end of a small bar of steel. A ¼-inch square section does for most types. Cast steel is supplied in bars of such sizes, and Sheffield steel of the 'Huntsman' formula has been used all over Europe for the last century and a half. But until the middle of the eighteenth century or rather later the punch-cutter had to forge his own pieces of steel, and old punches are of queer sizes and shapes. The punch in modern times is about three inches long, but the old ones are less, sometimes little more than an inch.

The end of the bar is filed and then ground on a stone until it is flat and at right angles with two faces of the shank of the punch, which are trued up and marked with a nick, so that, when put in the tool used for grinding, the face may always be at the same angle with the stone. You find this procedure used as early as 1500.

Most punch-cutters begin by making a counter-punch, shaped so as to make a hollow in the punch required for such letters as *o*, *e*, *a* (in fact nearly all letters) that have the whites in the middle that printers call 'counters' (thereby showing that they were once aware of the way they are made). Counter-punches survive that were made by the great masters of letter-cutting in the sixteenth century, and their use has been recommended by most people who have written on the art. But the modern punch-cutters, nearly all trained in Germany, disapprove of counter-punching and hollow the whites with drills and engraving tools. The older cutters sometimes used counter-counter-punches for complicated hollows, those in Gothic capitals for example.

The counter-punch, being brought to a very hard temper, is beaten into the face of the proposed punch, and the contours of the letter are made by filing. The shoulders of a punch are of great interest to a typefounder, because they affect its strength when being struck in the matrix and its liability to twist in the process as well as the ease of making the cast letters fit close enough together. The shoulders near the face have to be polished so as to give the contours the desired sharpness.

As the work of cutting the punch goes on, the cutter, being unable to judge the letter in reverse, has to take impressions. He does this in soot from a candle or a smoky oil lamp. When he is satisfied with his smoke-proof the punch-cutter puts his work away until all the letters of a fount are done and he can assemble his smoke proofs of the whole alphabet and retouch any punches about which he has second thoughts.

A set of smoke proofs pasted up neatly with the letters carefully aligned and with the right intervals between them gives to the practised eye the necessary indications for the success of the fount of type. It needs practice to foresee the effect of all the possible combinations of letters, and generally some letters have to be re-cut after trial.

The alphabets in smoke, if approved by the customer, are handed over to a matrix-maker, who has to produce letters to match the proof in alignment and set (spacing). The various punches, after being brought to a hard temper, are forced into pieces of copper, and the process of justifying them begins. This is the laborious and difficult work of filing the copper strikes until they become perfect matrixes for casting type. That means to say that the letters cast in them must be of the right height to be flush with other printers' types, and with a level face, aligned with the rest of the alphabet and, optically-speaking, upright and with the right margin on either side to fit the rest of the alphabet. Mechanically, it is a highly skilled operation: and something more than mechanical accuracy is needed, because an eye for counteracting optical delusions and producing a harmoniously spaced and aligned alphabet is essential. A good

justifier is the condition for success in making printer's type. In the past he has generally taught punch-cutters how to make alphabets that work well, and it is his judgment of a punch that the trade accepts.

Most of the great letter-cutters of the sixteenth, seventeenth and eighteenth centuries made their own matrixes. If they were employed to make matrixes from other people's punches, and, as generally happens, one or two broke in the striking, they would make new punches to replace the broken letters, and thus types that were in great demand became in course of time composite affairs, the work of several hands.

In modern times a set of punches was usually struck only once and the first set of matrixes was enough to satisfy the demand; but in early days it was common for a letter-cutter to sell strikes of his type, or even finished matrixes, to several customers—printers or typefounders. When this was done the mortality among the punches must have been high. You can trace it in some Dutch types sold to England in the seventeenth century, which got worse and worse during the succeeding hundred years, there being no skilful punch-cutters available to make the replacements.

Matrixes of copper, made by striking punches, are very durable. There are many of the sixteenth century still in perfect condition. Since 1844 it has been possible to make them by electrolytic deposit of the copper on an original which may be of soft metal. Large types are generally so made from letters cut in type-metal. Some punch-cutters like to make even small letters in this way; others prefer the steel. Electrolysis has been used widely by typefounders pirating the designs of others. The law gives in practice inadequate protection against it. One good potentiality of electro-deposition is that it can be used to make matrixes from old punches without fear of harming them, and to make from letters cast in old matrixes that are damaged or unsuitable for use in present-day casting-machines.

The relevance of all this to my present theme is, I think, that without a traditional school of typefounding it is unlikely that good types can be made.

Punches can be cut, and daily are cut, and matrixes engraved by machine, using patterns made from drawings by skilled draughtsmen—designers if you like. If they were well enough instructed, there is no reason why experts should not design type. But I think it is fair to say that under industrial conditions it is rare to find a talented designer working as a type-draughtsman. These almost always work from drawings by independent artists, adapting them to the technical requirements of the process, or else copy existing types. It appears to be normal in mass-production of objects with an æsthetic quality about them either to copy antiques or to employ an artist. The latter course often fails because the artist is insufficiently schooled in the trade. A school outside the trade is of little use. Continuity of tradition and experience is essential.

Punch-cutting, like printing, is by its nature imitation. There is no idiom of the process itself, or the tools. Whether a printer's letter is made from a punch filed by hand in hard or soft metal or from a punch or matrix drilled out in a machine makes no difference to the result, provided the machine is controlled and directed

properly. The design or style does not flow from the process. Both come essentially from the nature of reading and writing and to an infinitely less extent from some decorative idiom that is more or less common to all the arts.

Before the days of printing scribes had already discovered that a book hand is one that reduces letters to their essentials and adapts them for compactness. A current hand with its flourish and its instinctive ligaturing of letters is truer to the character of writing and is more beautiful: yet the scribes of Western Europe reserved it for purposes other than books. The utmost clarity and lucidity are got by making letters of strokes uniformly thick like the modern sanserifs, yet for the sake of compactness letters were evolved that stressed some strokes at the expense of others so that a smaller area of black was needed to express their significance—a short cut to legibility.

I think the European insistence on compactness in books has had a great effect on the character of book hands and printing. It is not only a post-Reformation characteristic; though it may have been accentuated since the time when it was thought fit that everyone should have a portable Bible. Since the Renaissance gentlemen have needed portable classics: so that small books are customary for good literature as well as for the Scriptures. The Arabs, who are great connoisseurs of writing, have used nothing but a ligatured script in printing, as in writing; being accustomed to read aloud they have not insisted as much as we have on compactness of letters or books or on their cheapness.

The virtues of printing types are inseparable from their scale. Because the types in common use are small the qualities most prized in them are precision and distinctness. This accounts for much in the history of the subject. Yet the greater masters of letter-cutting combined this minuteness of drawing with a certain robustness of shape. It was only in the middle of the nineteenth century that letter-cutting capitulated altogether to mechanical primness.

'Why are William Caslon's types so excellent and so famous?' asks Mr. D. B. Updike, the great popular historian of type. 'To explain this and make it really clear is difficult,' he says, 'his letters analysed are not perfect individually; but in mass their effect is agreeable. This is, I think, their secret—a perfection of the whole, derived from harmonious, but not necessarily perfect, individual letter-forms. To say precisely how Caslon arrived at his effects is not simple; but he did so because he was an artist. He knew how to make types, if ever a man did, that were (to quote once more M. Bernard's phrase) "friendly to the eye," or "comfortable" to quote Dibdin's happy term.'

It is remarkable that not only an accomplished typographer and printer, as Updike was, but Caslon's contemporaries, valued his founts above those of neater cut and greater refinement. Caslon was artist enough to achieve in the best of his types an optical rather than a mechanical harmony, to understand the importance of optical scale.

A sense of scale and the adaptation of letters to the various sizes of types so as to make them all as comfortable to the eye as possible is a very important part of the letter-cutter's art. It is a mistake to think that a range of types from great to small can all be made from one set of drawings. I said that before he can begin

cutting a letter a punch-cutter must have the whole fount in his mind's eye; but in fact he must do more. He must conceive a fount that is susceptible of reproduction in all the various sizes in which type is needed.

The relation of small to large must be made evident not by uniformity but by skilful variations. Yet there must be a pattern letter in the reader's eye that is reproduced as well as possible in every one of a range of sizes. The punch-cutter must see this letter in his mind's eye and cut it in all the necessary sizes with the right adaptation to scale. It must be a letter that is as suitable for large as for small types, handsome enough for the main line of a title-page and clear enough for a footnote. Many of our modern types fail at one or other extreme: some in their large sizes are obviously mechanical enlargements, others have small sizes that are illegible.

A range of sizes of letters all equally good and related by a common design is a requirement of printing rather than of writing; and the typefounder and printer have carried minuteness to a pitch that no scribe ought to attain. Type has a few such special needs in the way of technical planning; but generally speaking its design comes from the older arts. Type is badly designed if it does not reproduce one of these models or reproduces it badly.

When writing has a vigorous tradition type will copy it. Even those scripts that were unsuitable for typefounding and for books have always been brought into printing by some means or other. The fashion in writing, however extravagant or ugly, cannot be kept out of printing. The advertiser's brush script would be occupying punch-cutters now if there were any punch-cutters.

We live in an age that is singularly tolerant about handwriting. In most, mankind has had to conform rigidly to a copy-book. It is only half a century since the Civil Service Commissioners left off issuing specimens of script from which candidates for their examinations deviated at their peril. Changes in the copy books have been major upheavals in civilization, the symptoms at any rate of revolution. Plantin thought it essential that children should be given books printed in *Civilité* type, so that they would learn to write it. There are people even now who feel strongly that school-children, or rather public school boys, should be encouraged to write a formal Italian hand. I wonder if that fashion will prevail.

The uses to which handwriting is put nowadays are so intimate that it is, perhaps, unlikely that a formal hand can ever again have general utility. That is to say, the hands that typefounders would want to copy have at best a precarious existence and will not in the future be suitable models for type.

Yet a running hand with its nice alternation of discipline and freedom is delightful in type as in writing. Typefounding has for centuries been obliged to overcome the technical problems of reproducing current hands because printers found it necessary to use them for jobbing work, and do so still.

Few technical achievements of typefounding have been greater than the *Civilité* types, the first of which was cut by Robert Granjon in 1557, who wrote that he had cut 'our French handwriting' for use in books. Within half a century it was a model for the Secretary hand used for engrossing. Printers were obliged to buy it, doubtless at high prices, for printing charters, statutes, licences and

other documents with a legal flavour. Despite its complication and wealth of ligatures, it was made in four sizes and went on being used until late in the eighteenth century in France, the Low Countries and to a less extent in England.

By 1565 Granjon had also cut a type known as *Courante*, a rounded Gothic hand, intermediate in point of formality between the *Lettre de Forme* used for liturgical books and the *Civilité*. Plantin used it for Royal proclamations, and a century later Dutch printers were using it for commercial advertisements. It had nearly a hundred double letters to simulate the joins made by the scribes. That also was cut in two sizes. It appears to have shared its capital letters with the *Civilité* founts: it had none of its own.

No face of type has won so much admiration from the trade in its great days as Garamond's Greek, which I think exemplifies the freedom and restraint of a highly developed current hand as well as printers' letters can.

Typefounding rose to its greatest heights when rendering as faithfully as it could the scripts, whether formal or current, that were a necessary accomplishment of the polite world. The provenance of the styles that inspired the great masters of letter-cutting needs to be studied and publicized in a manual as popular and well illustrated as Daniel Berkeley Updike's book on printing-types.

It would be unwise to claim too much for the recent work of writers on typographical history; but I feel that it compares well with that of literature of the arts that should be feeding and sustaining typography. It is easy to feel the impulse of architecture because about that also there is an abundance of good, popular books; and in the recent past printing was perhaps too conscious of period-styles learnt from writers on architecture. But handwriting and incised lettering are hard to marry with typography for lack of any Updike in either field. Traditionally, they have provided what may be called least improperly the design of letters. Now they no longer do.

Someone should provide us with a history of handwriting as well illustrated and pregnant with humanity and wit as the best recent book on architecture and printing. The work of modern scribes, with a very few exceptions, seems so precious and so affected that it cannot be properly informed by a sufficient knowledge of the craft in the time when it was the common property of intelligent people. It has become separated from the humanities. This may seem ungrateful for Mr. Fairbank's excellent Penguin book on scripts. His book is bearing good fruit, but it is small and more are needed with more examples of the medieval hands.

The truth seems to be that the modern school of scribes, forced into too narrow a field by the prevalence of printing, tends to look back no further than Edward Johnston. I do not understand why the work and teaching of a man I admire so greatly should have limits in time and place that it should have led to printing-types that now seem of no permanent value. Unless, perhaps, that his inspiration is Gothic, and that Gothic art is not susceptible of mass-production.

The type of the Bremer Press, inspired by Johnston's teaching, is as beautiful as the writing that he and his disciples did and do. It is the best of the types due to his inspiration; but as a book-hand it is not acceptable. Johnston taught

writing that expressed the character of the tool with which it was made. In so far as it does it is characteristic of Gothic art and workmanship. No cutter of printing types can afford to do that. In cutting letters for printing it has always been necessary to simulate some other technique. The punch-cutter's tools leave no trace whatever on the resulting letters. Recent essays in letter-cutting showing the marks of the file seem unbearably mannered when once their novelty has ceased to be an attraction.

The letters adopted by printers were worked out by scribes; and those that can be developed for use in books are letters that are written in a style that is not natural to the pen, that forces the pen into an imitation of incised letter-forms. Some of the most beautiful types, as I suggested, have followed pen-work of exaggerated flourish, where the tool is used to show off command of hand. But unaccustomed simplicity, however genuine, is apt to appear an affectation in print. Even so accomplished a scribe as Graily Hewitt could not provide a model for a successful type. The psychology of reading seems to require that type should have associations not only with the pen but with the chisel as well, with engraving and with jewellers' work. Calligraphy is an essential element in it; but an excessive veneration for the pen is fatal.

The failure of such gifted men in the highly specialized field of typography can be explained by the lack of a school, a centre of a live tradition of adapting writing and lettering for the needs of printing. The lack of it must be supplied now by books on the subject.

The lessons of the books on printing types have, fortunately, and after a shaky start, been applied by composing machine makers. The guidance of Mr. Stanley Morison in the Monotype Corporation has meant that machine-set types reproduce the types of the great masters of letter-cutting. It could not have been so unless a scholar had been given such an opportunity.

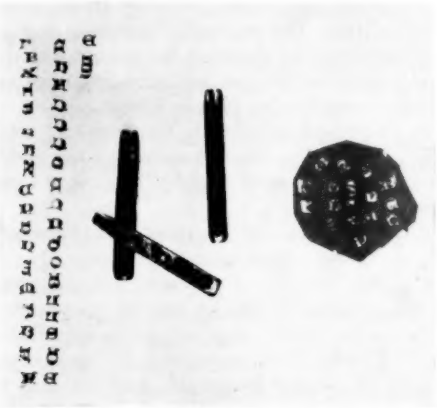
Design of this kind, based on an appreciation and knowledge of the classics of type-making, calls for constant refreshment from the past. The books must be kept up to date and new research published. But its impulse must sooner or later be inadequate to keep design alive.

In fact the composing machines have not simply reproduced the best work of the earlier typefounders: Eric Gill's mastery of lettering was turned to good account in the Perpetua types cut by the Monotype, and the excellent types designed recently by Jan van Krimpen and cut by hand in the traditional way under his supervision by Enschedé & Sons at Haarlem have been re-cut for the machine. The Monotype Corporation has gone a long way towards providing the essential thing for the survival of letter-cutting, a school of technique and design.

I think that is the essential thing. The typefounder must be a responsible man. He cannot build up or preserve a tradition of good work unless he chooses the design and amends it if necessary to conform with his standards. It is still more necessary that there should be amateurs coming into the school, but they must submit to its discipline and let their ideas be skilfully interpreted by tradesmen.

The lack of a school of this kind with a continuous tradition of skill, enterprise and judgment is always a handicap of letter-design and cutting. It is serious now since the decline of typefounding in small workshops and I think it accounts for blank or bad periods of typography in the past. The best work was done when eminent men—Aldus, Froben, Robert Etienne and Plantin were notable examples—collected round their presses a community of scholars, artists and tradesmen, where there was competent criticism and some common language so that the people with ideas could move those with skilled hands.

The art, if it is right to call it that, of letter-cutting has died out from time to time and has had to be re-learnt. It has generally been practised by self-taught men with only the results of the work of earlier masters to guide them. But in the great periods of typography there has been a school, like those round the



Punches for a Lombardic alphabet probably cut about 1500 by Henric de Lettersnijder, with their impressions in smoke (Plantin-Moretus Museum, Antwerp)

scholar-printers, or a narrow united commercial and religious community like seventeenth century Holland, or a small world of taste like the England of Baskerville. But we have to rely on books.

I have lately had an opportunity of studying, hurriedly and partially, the punches in the Plantin-Moretus Museum at Antwerp. They are almost all by the great French masters of Plantin's day and have probably been disused for more than 200 years. The illustration above shows some punches of an old Lombardic alphabet with smoke-proofs of the letters. Two larger types of the same design appeared in Antwerp and Dutch printing just after 1500 in the books printed by Henric of Rotterdam, who subscribed himself in his colophons as *De Lettersnijder*—the letter-cutter. These must, I think, be his punches; and

they interest me because, though they are probably the oldest in existence, the punches are almost exactly like those cut now by the few punch-cutters that there are. It does not seem likely that the art of cutting punches has developed since the invention of printing. It had been brought to its present state by goldsmiths and jewellers a long time before the first book was printed, and it was simply the invention of typefounding that made printing possible. In the same collection there are punches cut by Garamond, the most famous of all the masters of the craft. They have a cigar-shaped outline, which is some help to identify his work by corroborating the evidence of the impressions. This collection of letters is mixed—some are as late as the eighteenth century—and the problem is to sort them out.

Robert Granjon cut many of the types in Plantin's inventories. He was a great master of italic, and of Gothic script too; and one can see that he was longing to make the italic book hand descended from Aldus into something much more fantastic. His Double Pica—roughly 22-point—is a noble example of adapting a design aimed at legibility into a handsome thing in this large size.

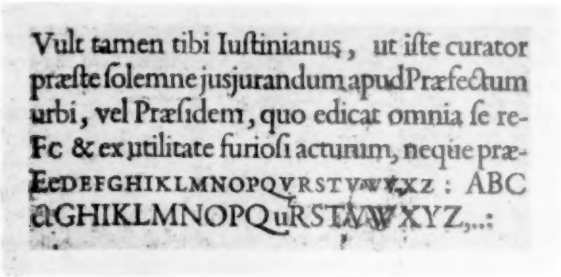
The great school of French punch-cutters seems to have been dispersed by religious war. Many of them were Huguenots. Plantin set up at Antwerp in 1555 and became the *Architypographus* of the King of Spain. There he organized the work of scholars of many shades of religious opinion and workmen, many of whom were Protestants. Conscience led him to migrate to Leyden in 1583 and become printer to the Calvinist university there. Though he went back to Antwerp soon afterwards, he left his son-in-law in charge of his printing office in Leyden and provided him liberally with types and matrixes. When Antwerp capitulated in 1585 after joining the Protestant side the terms of peace allowed people of the new religion four years' freedom from the Inquisition in which to leave the Province of Brabant with their belongings. At least three typefounders who had worked for Plantin moved to Holland, and took with them material from Antwerp of very high quality. Thus there came to be established a new centre of letter-founding, in Leyden at first and later moving to Amsterdam in the early years of the seventeenth century, whilst the Antwerp school declined and never revived.

The books printed by Willem Janszoon Blaeu in Amsterdam after 1619 showed a new style of type, fatter and shorter than those of the great Frenchmen, less graceful but extremely good. The first punch-cutter recorded as working for Blaeu was Nicholas Briot, who had worked for Plantin's son-in-law. Later Blaeu used the work of Bartholomeus Voskens, originally a painter (of pictures), and possibly of Christoffel van Dyck, the best known of the seventeenth century Dutch letter-cutters. It is difficult to be sure of the attribution of the types in Van Dyck's foundry: the St. Augustin is likely on grounds of style to have been cut in his time, and therefore is probably his own. It gives a good idea of the new manner, from which our distinctively English tradition of book-types is descended.

Another of Van Dyck's types, the Great Primer, is of an earlier day, and he must have bought it. It is found at Antwerp and in England soon after 1600, and

I should think it is Flemish in origin. It was, I believe, and deserved to be, an influential type. It had in it the germs of Van Dyck's and Vosken's highly-coloured letters and of Caslon's magnificent Great Primer, from which so many of us have gained our idea of high style in typography. But this supposedly Flemish fount has never been surpassed for dignity: it is a link between the French school, with its slightly fantastic graces, and the robuster and less mannered Dutch and English school.

In France they went on using letters of the Garamond style well into the eighteenth century. A conscious reform of the printer's alphabet on rational principles was attempted by the Académie des Sciences in 1692. In that year they undertook an investigation of the arts and mechanical sciences with the idea of making them worthy to represent French civilization. Choosing to deal first with printing, the Academy compiled a report, finished in 1702, with copper-engraved plates showing the approved design for every letter in the printer's cases.


Vult tamen tibi Iuſtinianus, ut iſte curator
præſte ſolemne jusjurandum apud Præfectum
urbi, vel Præſidem, quo edicat omnia ſe re-
& ex utilitate furioſi actunum, neque præ-
ABC
ABC

Great Primer Roman type from the specimen of the types cut by Christoffel van Dyck issued by the widow of Daniel Elzevir about 1680

As a help to punch-cutters they drew the letters on a squared background so that there could be no mistake about their exact construction, with the curves related to circles of various diameters. The plates were exhibited in the book-shops of Paris, but the report, compiled largely by M. Jaugeon, has never been printed: the manuscript remains in the Bibliothéque Nationale.

The plates and the suggestions in the report about the way punch-cutters should set about their work, being the product of inexperience, made Pierre-Simon Fournier, the letter-cutter and founder, very angry. 'How could anyone thus curb the mind and suppress taste,' he wrote, 'by loading genius with these chains? . . . Are so many squares needed to make an O, which is round, and so many circles to make other letters which are square? . . . These gentlemen would have been well advised to confine themselves to a single rule, which they propounded, namely "to be guided chiefly by the eye, the supreme judge".'

A cursory inspection of the report and plates convinced me that there is little

of value in either. But they are an important milestone in the history of type: the first (and last) attempt to systematize and standardize its design. It was hardly worth reproducing the plates as type, as the Imprimerie did early in this century as the Jaugeon face.

I was comforted whilst compiling this lecture by the failure of the French Academicians of the *Grand Siècle* to make anything of the task of writing about type design. But after their attempt type could not continue on purely traditional lines. The Jaugeon report was a symptom of the general feeling that printing had grown into an independent art or science and that in future the writing-masters could have no say in the construction of its letters. That report or that feeling are behind subsequent punch-cutting. Since 1702 italics have been evenly inclined at 15 degrees from the vertical and capital letters have ranged with the heads of lower-case ascenders. They can never do anything else so long as our civilization continues without a catastrophe.

But I wonder whether it is possible in the long run for letter-cutting to survive without the inspiration of a flourishing school of calligraphy, or whether as an art it has come to an end. Are we to envy the Arabs, who have never let the printer escape the rule of the scribe? A very fine rendering in large type of Arabic writing was made about 1600 by an unknown workman in Constantinople for the French ambassador, Savary de Brèves, and belongs now to the Imprimerie Nationale. It is humiliating to think that European typefounding has never produced as good a representation of the script. There was not, so far as is known, any letter-founding in Turkey at the time; so these punches are an illustration of the fact that you may find a brilliant punch-cutter anywhere at any time. But it certainly needed a European to make these punches into type: typefounding requires a long tradition of technical knowledge and skill.

I find some guidance towards the proper mood for the design of types in the sayings of those who have cut them and of those who have set the cutters to work.

The difficulty of finding a punch-cutter and of the punch-cutter's task are so great that they can generally be got over only by a great deal of optimism and enthusiasm. The first Jewish printer in Amsterdam, Menasseh ben Israel, said in the foreword to his first book, finished in 1627, that since the types of Bomberg had been worn out there had been no means of comforting Israel; but he had found a workman to make him a new type and had stood over him and made him imitate the handwriting of the noble Michael Levi, the first of scribes, and when the punches and matrixes were made he cast letters of gold and took them to the press. The types were taken as models of Hebrew letters for more than a century; and it is related that a famous punch-cutter, when he saw them, refused ever again to cut Hebrew, for he regarded these letters as perfection itself.

The mood of enthusiasm in which William Morris conceived the Kelmscott press is delightfully described by his daughter. Miss Morris told how she went with her father to a lecture by Emery Walker, in which pages from fifteenth century books were shown on the screen, 'books (she says) which moved him to repeat more than once that "the first printed books were the best ever done—the first and last of fine printing".

'After the lecture Father got very much excited. The sight of the finely-proportioned letters so enormously enlarged . . . his feeling, so characteristic of him that if such a result had been once obtained, it could be done again, stirred him to an overwhelming desire to hazard the experiment at least. Talking to Emery Walker on the way home from the Lecture, he said to him: "Let's make a new fount of type!" And that is the way the Kelmscott press came into being.'

Thomas Erpenius, the orientalist, wrote in the preface to his edition of Luqman's Fables in Arabic, printed at Leyden in 1615, that, seeing that no printer could be found furnished with the necessary types, for a long time he despaired of the progress of Oriental studies among Christian peoples, and wondered what he could do. And then, taking heart, he knew that he must set up an Oriental press and furnish it at his own cost. Beginning, therefore, with Arabic, he had supervised the cutting and casting of the types. For the next ten years he persevered, as he wrote, 'with great courage', having types made for Arabic, Turkish and Syriac (courage not being a Dutch word, he must have thought it especially apt for his meaning).

Punch-cutters themselves are rarely articulate. Therefore I was glad to discover, with the timely aid of a Hungarian friend, an apology for his life and opinions written in 1698 by a Hungarian printer and typefounder, Nicholas Kis. It was mainly a defence against critics of his Bible: in the text of which he had made certain emendations of an extreme Calvinistic tendency, but in the course of the book he tells something of his experiences.

He was born in Transylvania, at that time an independent buffer state between the Turkish and Holy Roman Empires, a small principality and an isolated outpost of Calvinism. His early ambition was to go to Holland to study divinity and so qualify for the ministry. On the point of leaving, he was persuaded by an eminent writer of his community that the greatest need of protestants of Transylvania was a good printer. When he got to Amsterdam in 1680, therefore, Kis apprenticed himself in the house of one Blaeu, a grandson of the great printer and cartographer. But believing that the lack of good types was the worst handicap of printing in his own country, Kis set himself to learn punch-cutting and typefounding. Not long after setting up on his own in 1683 Kis had made so much money and progress in his work that by 1685 he was able to print the Hungarian Bible with his own types and amend the translation to accord with his religious opinions. He stayed in Amsterdam until 1689 cutting types, as he said, for Sweden, Poland, England, Italy, Armenia and Georgia. His Georgian was the first type ever made for that script. Kis said that the King of Georgia himself wrote down the letters and a few lines of verse as a model for the types, but that he himself did not think well of the specimen and attempted something more ambitious, with which the Georgians were extremely pleased. As far as I can learn, the potentate who exercised suzerainty over Georgia at the time was named Archil, an intelligent man who greatly preferred the ways of Europe to those of the Persians. Leaving his throne, Archil emigrated to a village near Moscow in 1686 and there founded a Georgian community, where the first printing in Georgian was done. I should be surprised if the Ecclesiastical

Georgian, now at the Imprimerie Nationale, described as 'cut in 1670' were not the original type cut by Kis: for it was used earlier by the Propaganda Press at Rome, and Kis wrote that he did some work for the Pope.

In the darkness of typographical history even a feeble light such as that shed by the reminiscences of Nicholas Kis is a great help. He wrote that on his way home from Holland he left a set of his matrixes in Leipzig for sale and that it was a defective set. The origin of the Janson types, first shown about 1720, in a specimen by a Leipzig typefounder, under the heading 'Showing of the Dutch types' seems at last to be cleared up. Apart from one size, the Corpus, which is evidently older, the types are to be found in the books printed by Kis in Transylvania between his return from Amsterdam in 1689 and his death in 1702.

Hebrew letters 'portrayed' by Guillaume le Bé (the first) and cut in wood as patterns in 1573 (Bibliothèque Nationale, Paris)

Kis came to England and said that it had been 'his prison and his hell', and said no more. What did he do here and what happened to him? I should much like to solve that mystery too.

Another punch-cutter who wrote a little was Guillaume le Bé the first. His surviving writings are little glosses in the margins of his specimens. Fournier le jeune, a punch-cutter and typefounder of a later age, gives the facts about him thus: 'Guillaume le Bé of Troyes in Champagne, a disciple of Robert Estienne, after working for a time in Paris, went in 1545, to Venice, he being then 20 years old, and there cut numerous Hebrew and Rabbinical types for various people, especially Messer Marco Antonio Justiniani, a Venetian nobleman who had a Hebrew press. Thence he went to Rome at the time of the solemnization of the Jubilee of 1550 by Pope Julius III. Afterwards returning to Paris, he set up as a letter-cutter and founder and as such practised until 1598, in which year he died, aged 73'.

In the scrapbooks where he pasted specimens of his work, Le Bé wrote such comments as this of No. IX: 'In the year 1551 in the summer in the city of Paris I cut this letter No. 9 for the Sieur Claude Garamond cutter and engraver of the King's Greek types. And that was after my return from Italy and from Troyes to Paris. Cut in his house in the Rue des Carmes'; and he adds in another notebook: 'this was accomplished to the great satisfaction of one who knew more about it than I'.

And of XV (bis): 'In the year 1573 in Paris I made this drawing and portrait of the Hebrew alphabet preserving its best characteristics as it has been handed down from antiquity, in the judgment of the people most experienced in Hebrew lettering among those of their religion and nation in the city of Venice, where I dwelt five years and more, following the portraits and rough scribbles that I made whilst I was there'. Of XVI (bis) he writes: 'In the year 1591, after the siege of Paris, during the great troubles, I amused myself by making these portraits of big letters: one for text and the other for glosses. This second is a running letter, which the Hebrews use for their accounts and business in the ordinary way. My cursive or running hand is rather got-up, like the ones they use for printing the commentaries or glosses in their books, after the fashion of the Eastern Levantines or Old Spaniards. What they write by hand is not so got up or rounded out, but has more cleverness [*chicanerie*] about it—quicker and more current'.

You can add to these fragments the more sustained treatises, which are more accessible, of Moxon, of Fournier le jeune and of Bodoni. But I think le Bé's marginal scrawls have the heart of the matter in them. And with them I leave the subject.

DISCUSSION

THE CHAIRMAN: I wish to ask one question: when they wrote the hand which we call *Civilité*, which perhaps they called *Civilité* too, did they also have a common hand, or was that the only hand in use?

THE LECTURER: I think there would be people in the audience who would know better than I; but I believe it is right to say that the *Civilité* cut by Granjon in 1557 was the common hand used for everyday purposes in France. He called it '*notre écriture françoise d'art de main*'. I suppose that meant it was a somewhat elaborate, well-written hand; but it is one which certainly was used. In course of time, when normal handwriting degenerated rather into the kind of scrawl which we saw in the vintners' recognizances, the handwriting of the mid-sixteenth century became the formal engrossing hand of a somewhat later age. I do wish I could answer such a question really well, but the fact is that I am not an authority on palæography.

THE CHAIRMAN: I should also like to ask the lecturer why, in his reference to the revival of the italic hand to-day, he made the assumption that this was rather precious and that it was particularly suitable for public school boys, because, in my experience at the Society of Italic Handwriting, by far the keenest people are teachers in elementary schools?

THE LECTURER: This was really somewhat of an aside from the main theme of my lecture. I think it was prompted by the fact that one of my children is a public school boy and he writes to me (occasionally) in this hand. I find it very irritating. It is affected and not the natural way in which to address a near relation. I am very pleased indeed to hear that it has the support of other kinds of schools as well, because I do not like to think that there is a distinction in handwriting between the public and the other, less private, schools of this country. But I do not much care for the hand myself as a means of communication between ordinary people.

THE CHAIRMAN: On behalf of the audience I accept the explanation and apology. I shall now express to the lecturer on your behalf our warm appreciation of his learning and of his taste in quotation, and of the most interesting set of slides which he showed us.

The vote of thanks was carried with acclamation, and the meeting then ended.

INTERNATIONAL SHOW JUMPING

A Dr. Mann Juvenile Lecture by

LIEUTENANT-COLONEL H. M. LLEWELLYN, C.B.E., M.A., M.F.H.

Wednesday, 6th January, 1954.

The following summary of the lecture was provided by Mr. H. H. Schag-Montefiore:

Before the war international show jumping was virtually a monopoly for the Army, but now teams are very often comprised solely of civilians. Weedon, the famous military equestrian centre, deserves warm praise for the part it played in training our pre-war teams, particularly as the mounts consisted in the main of cheap (£30) troop horses. Now, apart from the Household Cavalry and the King's Troop, Royal Horse Artillery, the Army has virtually no horses, and that is a very good thing as horses will no longer be slain in battle.

Nearly all the horses and riders who take part in show jumping come from the hunting field, and without fox-hunting we would be at an overwhelming disadvantage. Fortunately there is the closest possible liaison between fox-hunting and show jumping, and we owe a great debt to the patronage of the Duke of Beaufort who generously permits an annual three day competition at Badminton.

International show jumping was started again as soon as possible after the war. We found there was a great difference between jumping at home and abroad, where under Federation Equestre Internationale rules speed is the most important factor. In 1947 our team at Nice and Rome was soundly beaten although Kilgeddin won the 'Puissance' at the latter show, but the practice was of great advantage to us. In the autumn, when Brian Butler rode Tankard to victory on a dark night in the Daily Mail cup it was the herald of a new day for us. In the 1948 Olympic Games, held in heavy going at Wembley, Great Britain won bronze medals, finishing behind Mexico and Spain. The eleven other foreign teams failed to get round. In 1949 a British team won the Prince of Wales Cup at the White City and competed at Nice and Rome where it did well. Unfortunately, at that time the Press took rather an unhealthy interest in reporting our failures and not our successes. For example at Paris when Miss Pat Smythe beat Mrs. Llewellyn by half a second so that they finished first and second in the Open Ladies' Event there was not a word in the English papers. But when the next day Mrs. Llewellyn riding Monty was 'carted' twice round the course, it was headlined as 'British Woman Goes Wrong In Paris'. However, that is all past history and now, thanks in the main to the Press, wireless and television, jumping has become a new national sport.

It is the policy to introduce new people and not only to use the same team of 'hired assassins' all the time. For example we were represented in Rotterdam last year by Lady Mary Rose Williams, Miss Renée de Rothschild, Miss Jill

Palethorpe, Major Beale, Captain Dallas and Major Gibbon. They acquitted themselves superbly, and while we can rely on a 'B' team winning a Prix de Nations cup we need have nothing to fear.

The mistake the Irish made was not to train reserves to take the place of their more experienced and older riders, and that is the reason for their temporary lack of success. Perhaps our greatest rival in International show jumping now is Argentina.

Foxhunter, the lecturer up

In 1950 and again last year we sent teams across the Atlantic, and they acquitted themselves creditably and played a part in raising our prestige and displaying the superlative qualities of British bloodstock. Our great year was 1952, and it will be remembered that the show-jumpers brought back our only gold medals from Helsinki. It was fitting that they should have been won in the presence of the Duke of Edinburgh and the Duke of Kent, for the Royal Family show the greatest interest in the sport. On his return from Finland the Duke of

Beaufort was summoned to Buckingham Palace from the airport to give the Queen a first-hand account of our success, which was due in no small part to the generous contributions made by so many supporters and horse-lovers, of whom Her Majesty was foremost.

Unfortunately, owing to the Australian hygiene rules, it seems that the stock-breeders and the Department of Agriculture will not admit horses to enable the equestrian part of the Olympic Games to be held in Melbourne in 1956. It would be a dreadful thing if we should have to wait eight years for another gold medal. The F.E.I. would probably hold the event elsewhere. [*Since the lecture Stockholm has been chosen for the equestrian event.*]

I am sorry that I have not been able to bring Foxhunter with me to London. He recently celebrated his thirteenth birthday and is enjoying a well-earned rest after his transatlantic tour. He is not yet middle-aged and probably has half-a-dozen years of jumping ahead of him. He will go on show jumping as long as he enjoys the game. It must not be forgotten that one of the best American jumpers, Democrat, is aged 22, and won five events in New York last year.

The lecture was preceded by a film-show consisting of Pony Club instructional films with a sound commentary by Captain Tony Collings, the trainer to the British Olympic Three Day Riding Team Event, and a film showing Bryan Marshall demonstrating how to ride over National Hunt fences.

GENERAL NOTES

DESIGNING AN EXHIBITION

The design of the recent Food Fair at Olympia earned much praise, particularly for creating a pleasing general effect without imposing too much on the individual exhibits. It was thought that readers of the Journal *might be interested in hearing about some of the problems involved from its designer, Mrs. Darcy Braddell, who is a Fellow of the Society, and Mrs. Braddell was accordingly invited to write the following short article:*

Until the promoters of Food Fair invited me to act as consultant designer in 1950, and subsequently to be actively responsible for its design, I had never had the thrill—for thrill it is—of decorating the Grand Hall of Olympia.

But, with my partner Jean Beecher, I took on the job with enthusiasm, some trepidation and considerable pleasure.

I had, of course, done exhibition work for a long while, designing many 'features' (as they are called in the exhibition world) and model rooms as well as countless individual stands of all sorts and kinds.

I only mention these past experiences because it is in the light of them that I have been able to arrive at certain conclusions, some perhaps obvious, others about which it is less easy to dogmatize.

One of the first things the exhibition designer should never lose sight of is that he is being employed to set off the actual exhibits to their best advantage. This may sound obvious, but how often does one feel that the designer has lost himself in the pure delight of designing an attractive *décor* which takes no notice at all of the character of the exhibits, which he treats with an almost contemptuous indifference.

There are, of course, exceptions which, on certain occasions, are justified. I think the 'Britain Can Make It' Exhibition of 1946 was an instance of this. The psychological effect, just after the war, of the gay and enchanting settings was, in

itself, invaluable and, since the quantity and quality of the first post-war goods were difficult to assess in advance, the exhibition had to be considered from that angle.

In a much humbler instance, the children's section at the Ideal Home Exhibition, which had to be launched and introduced to the public with some *éclat*, justified more freedom of plan and greater expenditure of money than would normally have been the case. The whole section, which we called 'Piccaninny Circus', was therefore treated more as a 'feature' than a purely commercial section.

A second lesson learnt from grim experience—but not always considered with sufficient sympathy when judging other exhibitions than one's own—is that a good ground plan often has to be sacrified to the necessity of selling every inch of space. Wide gangways are reduced to a minimum, charming vistas destroyed and even obvious bottlenecks condoned.

Although the display of the actual exhibits must remain of primary importance, and the standard fascia designs, too, must not impose difficulties on individual displays, it is very much in the exhibitors' interests that the decorations of the place of exhibition itself should create an exciting and stimulating impression, suitable to its subject.

In the case of Food Fair we wanted the effect to be appetising, airy and gay. We decided to emphasize and not to hide the admirable proportions of the Grand Hall of Olympia; to accentuate the spring of the roof trusses, and to make a hero of the fine gable at the West End, keeping, if we could eliminate the glare, the delicate traceries of its glazing.

To do this, we stretched one layer of white material over the whole face, creating a beautiful misty white background for the revolving sails of a large windmill which formed the apex of a group of buildings. These were flanked by a stylistically painted back-cloth depicting on one side harvest time in rural England and on the other a newly developed industrial area.

Jean Beecher painted the delightful originals—imaginative and stylish, though not provocatively so. They were enlarged from her half-inch scale paintings by Alick Johnstone with his customary skill, none of their spontaneity and freshness being lost.

An archway under the mill gave access to the annexe and the galleries were reached by two staircases which led through the buildings on either side of it, and which were carefully designed to form part of the whole composition. We kept the decorations down the long north and south sides very simple, casing in the roof trusses to a certain height, decorating every third one with vividly painted cartouches, and linking them with horizontal bands along each bay. We added a simple cornice moulding along the finishing line which gave rigidity and a certain architectural quality to an otherwise very modest cladding.

White was our main colour with touches of reds, pale yellows and bird's egg blue predominating. I am very much in favour of keeping to a limited palette for the main decorations of an exhibition.

The elegant fascia designs, a very important item, were mainly the work of Richard Bartle, though we proved a very happy team in uniting our energies throughout. We were also fortunate in the encouragement of the organiser, Jimmy O'Shea, who always supported us.

LECTURES AT THE VICTORIA & ALBERT MUSEUM

The first series of free evening lectures being held this year at the Victoria & Albert Museum has now begun and lectures will be delivered each Wednesday at 6.15 p.m. until December 15th.

Among the lectures there are to be two on the *English Formal* and the *English Romantic Garden*, by Helen Lowenthal, on 13th and 20th October, and two on 3rd and 10th November, on the exhibition of Rococo Art from Bavaria which is being shown in the museum. Details of the other lectures can be obtained from the museum (Kensington 6371).

FROM THE JOURNAL OF 1854

VOLUME II. *29th September*, 1854

From an article on The Ventilation of St. George's Hall, Liverpool.

Any account of the new St. George's Hall would be incomplete which did not attempt to give some description of Dr. Reid's vast system of ventilation and warming the edifice. Far down in the depths, below the tesselated floor of the hall, there are furnaces, and boilers, and steam-engines, and fans, and miles of pipes, and arched galleries, and vast iron recesses, where the gnomes and the zephyrs and other breezy deities work with unexhausted energies to supply the breath of life for the myriad-peopled edifice; while far above the heads of the enraptured audience furnaces and other volcanic agencies are brought to bear for the purpose of scattering to the winds the air which, having passed through the minute air vessels of the lungs, has become vitiated by contact with humanity. . . .

The average temperature at which the hall has been kept throughout the whole of the concerts has been about 67 degrees, varying not more than one degree each way. The plan adopted has proceeded upon the principle of providing the hall, with its approaches and courts and offices, with one vast and complete pneumatic apparatus, capable—so far as the decorations of the structure will admit—of diffusing an equable temperature over every part of its structure. To accomplish this was a task of no small difficulty; and, whatever may have been the reputed failures of Dr. Reid in the House of Commons, under a divided authority and responsibility, it is but justice to say that, in so far as opportunities have at present been afforded, the mode of warming and ventilating St. George's Hall, as suggested and carried out by Dr. Reid, is successful, and has achieved the object for which it was designed.

Some Activities of Other Societies and Organizations

MEETINGS

MON. 4 OCT. Engineers, Society of, at the Geological Society, Burlington House, W.1. 5 p.m. Marjorie Lovell Burgess: *The Influence of Murdoch on the Modern World.*

Farmers' Club, at the Royal Empire Society, Northumberland Avenue, W.C.2. 2.15 p.m. C. W. Strutt: *Farming in Australia.*

Imperial Institute, South Kensington, S.W.7. 5.45 p.m. A. S. Ryan: *Exploring the Islands: The Blue Mountains of Jamaica.*

TUES. 5 OCT. Japan Society of London, at the Victoria & Albert Museum, S.W.7. 5.30 p.m. C. J. Dunn: *The Japanese Puppet Theatre.*

WED. 6 OCT. Chemical Engineers, Institution of, at University College of South Wales and Monmouthshire, Cathays Park, Cardiff. 7 p.m. C. E. McEwen: *Use of Glass in the Chemical Industry.*

Road Transport Engineers, Institute of, at the Royal Society of Arts, W.C.2. 6.30 p.m. T. F. Turton: *Transport in South Africa.*

Victoria & Albert Museum, S.W.7. 6.15 p.m. Stella Mary Pearce: *Elizabethan Costume.*

SAT. 9 OCT. Chemical Engineers, Institution of, at the College of Technology, Manchester. 3 p.m. F. Rumford: *The Absorption of Carbon Dioxide in Liquid Spray.*

MON. 11 OCT. Imperial Institute, South Kensington, S.W.7. 5.45 p.m. Kathleen Newick: *Exploring the Islands: Samoan Paradise.*

TUES. 12 OCT. Electrical Engineers, Institution of, Savoy Place, W.C.2. 5.30 p.m. *The Teaching of the Subject of Electro-magnetism* (Discussion).

Illumination Engineering Society, at the Royal Institution, 21 Albemarle Street, W.1. 6 p.m. E. C. Lennox: *Lighting and Electricity Supply.*

Manchester Geographical Society, 16 St. Mary's Parsonage, Manchester, 3. 6.30 p.m. S. H. Beaver: *West of the Rockies.*

WED. 13 OCT. British Kinematograph Society, at G.B. Theatre, Wardour Street, W.1. 7.15 p.m. R. Ollerenshaw: *The Use and Abuse of Film in Medical Illustration.*

Chemical Engineers, Institution of, at University of Birmingham, Edmund Street, Birmingham. 6.30 p.m. J. F. Paddav: *Photography in Scientific Research.*

Engineering Inspection, Institution of, at the Royal Society of Arts, W.C.2. 6.45 p.m. J. Foster Cooper: *A Description of the Statistical Quality Control System in Operation at Joseph Lucas (Electrical) Ltd.*

Victoria & Albert Museum, S.W.7. 6.15 p.m. Helen Lowenthal: *The English Formal Garden.*

THURS. 14 OCT. Chemical Engineers, Institution of, at the Fuel Department, The University, Leeds, 2. 7 p.m. *Iron, Steel and Steel Tube Manufacture, illustrated lecture presented by Stewart and Lloyds Ltd.*

At the Royal Institution, 21 Albemarle Street, W.1. 5.30 p.m. R. Edgeworth Johnstone: *Pre-design Estimation of the Capital Cost of Chemical Plant.*

Chemical Society, at the North British Station Hotel, Edinburgh. 7.30 p.m. R. Spence: *Chemical Research at Harwell.*

Sanitary Engineers, Institution of, at Caxton Hall, Westminster, S.W.1. 6 p.m. J. F. Lyne: *Some Aspects of Administrative and Establishment Work in the Engineer's Department of a large Municipal Authority.*

FRI. 15 OCT. Chemical Engineers, Institution of, at Caxton Hall, Westminster, S.W.1. 6.30 p.m. G. G. Betts: *Steam Jet Refrigeration.*

SAT. 16 OCT. Horniman Museum, London Road, Forest Hill, S.E.23. 3.30 p.m. Rev. A. M. Jones: *African Music.*

OTHER ACTIVITIES

MON. 4 OCT. Imperial Institute, South Kensington, S.W.7. Films: 12.30 p.m. *Highlands of Rhodesia*, 1.15 p.m. *Loon's Necklace—Canada*, 3 p.m. *Land of Tomorrow—Canada.*

MON. 11 OCT. Imperial Institute, South Kensington, S.W.7. Films: 12.30 p.m. *Winter in Quebec—Canada*, 1.15 p.m. *Bermuda Holiday*, 3 p.m. *Northland Tour—New Zealand.*

NOW UNTIL 31 DEC. Imperial Institute, South Kensington, S.W.7. Exhibition: *Sir Alfred Bossom's Collection of the Arts and Crafts of the British Columbia Indians.*